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EXAMINER	
SPRINGBORN, H	
ART UNIT	PAPER NUMBER
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DATE MAILED:

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This is a communication from the examiner in charge of your application.

COMMISSIONER OF PATENTS AND TRADEMARKS

☒ This application has been examined ☐ Responsive to communication filed on \_\_\_\_\_ ☐ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), 0 days from the date of this letter.  
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- |   |   |
|---|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited by Examiner, PTO-892. | 2. <input type="checkbox"/> Notice re Patent Drawing, PTO-948.                  |
| 3. <input type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449                  | 4. <input type="checkbox"/> Notice of Informal Patent Application, Form PTO-152 |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474      | 6. <input type="checkbox"/> _____   |

Part II SUMMARY OF ACTION

1. ☒ Claims 1 THROUGH 25 are pending in the application.  
Of the above, claims None are withdrawn from consideration.
2. ☐ Claims \_\_\_\_\_ have been cancelled.
3. ☐ Claims \_\_\_\_\_ are allowed.
4. ☒ Claims 1 THROUGH 25 are rejected.
5. ☒ Claim 21 IS OUT OF ORDER AND IS objected to.
6. ☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.
7. ☒ This application has been filed with informal drawings which are acceptable for examination purposes until such time as allowable subject matter is indicated.
8. ☐ Allowable subject matter having been indicated, formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on \_\_\_\_\_. These drawings are ☐ acceptable;  
☐ not acceptable (see explanation).
10. ☐ The ☐ proposed drawing correction and/or the ☐ proposed additional or substitute sheet(s) of drawings, filed on \_\_\_\_\_  
has (have) been ☐ approved by the examiner. ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed \_\_\_\_\_, has been ☐ approved. ☐ disapproved (see explanation). However,  
the Patent and Trademark Office no longer makes drawing changes. It is now applicant's responsibility to ensure that the drawings are  
corrected. Corrections **MUST** be effected in accordance with the instructions set forth on the attached letter "INFORMATION ON HOW TO  
EFFECT DRAWING CHANGES", PTO-1474.
12. ☐ Acknowledgment is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received ☐ not been received  
☐ been filed in parent application, serial no. \_\_\_\_\_; filed on \_\_\_\_\_.
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in  
accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

15) Claims 1 through 25 are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1, 2, 5, 6, 11, 13, 15-25 and 30-37 of copending application Serial No. 425,612.

This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

a) The above two sets of claims are identical as is the applicant in the two applications. This application is a CIP of the conflicting application (e.g. SN 425,612) which is still pending.

16) Claims 1 through 25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a) In Claims 1, 4, 5, 8, 14, 18 and 22, it is uncertain exactly how to construe computer "system for contemporaneous real-time entry and compilation of a program having source code" (Claim 4), computer "system for contemporaneous real-time entry and compilation of source code" (Claims 5 and 8), compiler "system for real-time compilation of source code as the latter is entered at a console keyboard" (Claims 14 and 18) and computer "system for real-time compilation of source code concurrently as the source code is being entered into the system" (Claim 22) appearing variously in the

opening lines of each of such claims. Is the "entry" and "compiling" done at the "same time" in "real-time" as Claims 1, 4, 5, 8 and 22 are claiming? Are the expressions "a source program", "a program having source code" and "source code" appearing Claims 1, 4 and 5, 8, 14, 18 and 22, respectively, supposed to encompass the same material? Is there any difference between a microcomputer (or computer) "system" as set out in Claims 1, 4, 5, 8 and 22 and a compiler "system" as set out in Claims 14 and 18, and if so, what is it?

b) In Claim 1, it is uncertain, (1) exactly where the antecedent basis for the "translation of the source program" appearing in lines 6-7 (e.g. isn't "compilation" more correct?), (2) exactly what is meant by "a vector address leading to said interrupt service routine" (emphasis added to lines 11-12) for why a "vector address" is used and what is contemplated by "leading to" are both subject to too much speculation to be definite, (3) exactly where the antecedent basis is for "the partial source program" as set out in lines 15 and 17-18 thereof, (4) exactly how the console means as set out in supra lines 3-4 (to input successive characters) has the capability to activate the "interrupt input" as set out in supra lines 3-4, exactly how source program characters can be used to execute editing commands as is set out in lines 24-26 or exactly

Serial Number: 719,507

4

Art Unit: 232

what is edited, (6) exactly how the editor means as set out in lines 27-30 has the capability to designate the "pause" location as set out in lines 27-30 or what "further portion" of the source program is being referred to in such lines for no previous "portion" thereof is considered to have been claimed (see also *infra* lines 34-35), (7) exactly how the compiler can be used as per lines 31-33, since according to *supra* lines 20-23 control of the system has been passed from the compiler to the interrupt service routine, or (8) exactly how to correlate what is set out in lines 36-39 with what is otherwise claimed (e.g. "input characters" and "editing commands" appearing in *supra* lines 24-26; "additional portions" in lines 34-35; "the partial source program" in lines 14-16; and "successive characters" in lines 3-4).

c) In claim 2, it is uncertain, (1) exactly how the modifying as set out in lines, e.g. 2-3 thereof, can be correlated to the entering execution functions as set out in lines 24-26 of parent Claim 1, or (2) exactly where in the sequency of events set out in parent Claim 1 would the modifying and reinitialization functions as set out therein be incorporated. Besides the above comments re Claim 2, such claim is also rejected for being dependent upon a rejected parent without curing the deficiencies pointed out for its parent Claim 1. In

Serial Number: 719,507

5

Art Unit: 232

Claim 3, it is uncertain, (1) exactly what "operation" of the editor is being referred to in lines 6-7 in view of what is set out in lines 24-26 of parent Claim 1 or what would be "the location of the source program to be affected" as is set out in such lines 6-7, (4) exactly how to correlate the initialization as set out in lines 14-15 with the initialization in line 13 in parent Claim 1 or the passing of control to the interrupt service routine as per lines 20-23 of such parent Claim 1, or (5) exactly where in the series of events set out in parent Claim 1 and as modified by preceding lines 1-15 of this claim that the reinitialization of the compiler as set out in lines 16-18 is done.

d) In Claim 4, it is uncertain, (1) exactly how to construe lines 6-7 for the "," in line 6 is considered to have created disjointed phrases the meanings of which are considered ~~subject to too much speculation to be definitive~~, (2) subject to too much speculation to be definitive, (2) exactly how to correlate the successive entering of input characters constituting a portion of the source program by the editor as set out in lines 8-11 with the input of successive characters constituting the source code as set out in supra lines 4-7 thereof, (3) exactly what type of "an editor" is contemplated that has the capability of including the "entering" and "execution"

Serial Number: 719,507

6

Art Unit: 232

functions set out in lines 8-11 and have "means therefor or where the antecedent basis for "the source program" appearing in line 10 thereof (see also, *infra* line 19), (4) exactly how to correlate the passing of control to "said editor" as set out in lines 17-18 thereof in view of the "entering" and "executing" as set out in *supra* lines 8-11 for using the "means-plus-function" format, the functions are normally presumed to be performed by the associated means, (5) exactly how to correlate the designation (by the "editor"?) as set out in lines 19-21 with the passing of control to the "editor" as set out in *supra* lines 17-18 (e.g. for performing the two functions set out in *supra* lines 8-11?), (6) exactly how to correlate what is set out in lines 22-25 with what has been previously claimed especially in view of the passing control (of the system) to the "Editor" as set out in *supra* lines 17-18, or (7) exactly how to correlate the return of control to the compiler upon "entry of at least one input character or the execution of an editing command" as set out in lines 26-28 in view of the successive entry of "input characters ... to store <sup>a</sup> portion of the source program" and the execution of "editing commands" (emphasis added to *supra* lines 8-11).

e) In Claim 5, it is uncertain, (1) exactly what relationship (if any) the "code" stored as per line 3

Serial Number: 719,507

7

Art Unit: 232

has to the "source code" entered as per lines 1-2, (2) exactly how to correlate the entry of the source code entered as per lines 5-6 with the entry of such source code as per supra lines 1-2 or exactly what type of an "input means" can be used for editing of source code whether previously entered or not as indicated in lines 5-6 or exactly what "source code previously entered" is being preferred to in such lines 5-6, (3) exactly what "control of the system" is contemplated as per line 9 (e.g. as the source is entered?), (4) exactly what is meant by "to call said input means" and pass control thereto as is set out in lines 10-12 (e.g. to enter and to edit?) or how to correlate the "control of the system" as set out in lines 10-12 with supra lines 7-9, (5) exactly what "operation of said keyboard means" is contemplated as per lines 11-12 in view of supra line 4 (e.g. what keys or key is used?), (6) exactly what "code" is being referred to in line 14, (7) exactly how the "input means" as set out in supra lines 5-6 has the capability of determining the pause location as set out in amended lines 14-15, or (8) exactly how to construe the return of the system to the compiler as set out in lines 16-17 in view of the many questions set out in this Office Action re supra lines 5-6.

f) In Claim 6, it is uncertain, (1) exactly where the antecedent is for "said pause location of said

source code" as set out in lines 2-3 and it is not seen how a "source code" can have a "location" as inferred by such lines, (2) exactly where the basis is for the changing of the identification by the "input means" appearing in lines 4-5 for no such function has been claimed for such "input means" (see e.g. lines 5-6 of parent Claim 5), or (3) exactly how the "advancing" of the pause location as set out in lines 6-9 thereof is to be considered in view of the change in the pause location by the input means as is set out in supra lines 2-5 thereof or why such "advancing" is done "after" the entry of the predetermined quantity of a new source code and not as a result thereof. In Claim 7, it is uncertain, (1) exactly where in the system the "modifying (of) a previously compiled portion of the source code" (e.g. the object program?) is done as per lines 5-6 thereof for none of lines 3, 5-6, or 7-9 of parent Claim 5 are considered to have defined such area of the system, or (2) exactly how such "modifying" as set out in lines 5-6 thereof is to be considered re the "editing (of) source code previously entered" as is set out in lines 5-6 of parent Claim 5.

g) In Claim 8, it is uncertain, (1) exactly what is encompassed by "normally having control of the system" by the compiler means as is set out in lines 3-4 for once a compiler operates on the source code to



Serial Number: 719,507

9

Art Unit: 232

generate the object program, "control of the system" is then under control of the object program, or (2) exactly what is encompassed by the "actuatable" means taking control of the system as set out in lines 5-7 thereof in view of item "1" above, or what is encompassed by "a source code byte" appearing in amended lines 6 and 10 in view of what is otherwise claimed. In Claim 9, it is uncertain, (1) exactly what purpose in the system is served by the "pause point of said source code" or "which location" is meant in view of what has been previously claimed, (2) exactly how the "predetermined quantity of new source code" as set out in lines 5-7 is to be considered in view of the entrance of the "source code byte into said system" as is set out in lines 6-7 of parent Claim 8, or (3) under whose control (e.g. the compiler or interrupt means) the identifying and advancing as set out in this claim is done.

h) In Claim 10, it is uncertain, (1) exactly when the compiler as set out in parent Claim 8 is initialized according to line 2, (2) exactly how the "editor means to modify the source code" as set out in line 3 is to be correlated to the "interrupt means" which enters "a source code byte" as is set out in lines 5-7 of parent Claim 8, or (3) exactly how to correlate the reinitialization means as set out in lines 4-6 thereof with the "return means" as set out in lines 8-10 of

parent Claim 8. In Claim 11, it is uncertain how the "striking (of) at least one" of the keys on the terminal as set out in lines 3-4 thereof can be equated to the entering of "a source code byte into said system" as such appears in lines 6-7 of base claim 8. In view of the uncertainty of what is envisioned by the "editor means" appearing in amended line 3 of Claim 10, exactly how such "editor means" can include the "controlling" of "the extent of the source code" as set out in Claim 12 and the "reinitialization of the compiler means" as set out in Claim 13 especially in view of the actuation of the interrupt means (e.g. amended Claims 11 and 8) by the "striking (of) said keys".

i) In Claim 14, it is uncertain, (1) exactly what further limitation is being added by lines 5-6 thereof that is not covered by what is set out in lines 1-3 thereof, (2) exactly how to correlate the "actuation of a (any?)key" to activate the interrupt means "for entering a source code byte (whatever that is suppose to cover?) into the system" as is set out in lines 7-8 thereof with the previous recitation of entering "source code" at the keyboard of the console or why an "interrupt means" is used (e.g. what is being interrupted?), (3) whether the "source code" compiled as per lines 9-10 includes the "source code byte" entered as per supra lines 7-8 or exactly what is encompassed by

"normally controlling said central processing unit" as set out in lines 9-10 for, under "normal" operation of a "system", the only function served by a "compiler means" is the compilation of an object program from source code (or data) which "object program" controls the "system" of which the "central processing system" is part of, (4) exactly what is envisoned by the "passing of control" as set out in lines 11-13 in view of the comments set out in supra comment "3" re lines 7-8 or what the relationship (if any) would be of "each actuation of a (any?) key at said keyboard" appearing in lines 11-13 to "actuation of a key at said keyboard" appearing in lines 7-8, or (5) exactly how to consider "passing control" and "source code byte" as recited in lines 14-16 in view of the comments relative thereto set out immediately above.

j) Claims 15-17 are rejected initially for being claims that are dependent upon a rejected parent claim<sup>"</sup> and not curing the deficiencies noted for such parent claim. Also in Claim 15, it is uncertain, (1) exactly where the antecedent basis is for "said editor means" appearing in line 2 thereof, or (2) where in the "system" the "controlling" means set out in lines 2-3 thereof appears. Also in Claim 16, it is uncertain, (1) exactly what modification responsive means is being claimed therein since no editor means is considered to

have been set out in parent Claim 15, (2) exactly what "a portion of the source code" is contemplated in line 4 thereof, or (3) exactly how to construe what is set out in lines 2-3 for the comma set out in line 3 is considered to have created disjointed phrases. In Claim 17, it is uncertain, (1) exactly what "said controlling means" is contemplated in line 2 thereof or where in the system it and its incorporated "identifying" means would be located, (2) exactly what is contemplated by "a pause location" in said source code appearing in line 3 thereof or its changing as set out in lines 4-5 thereof for no "editor means" is considered to exist in the system, (3) exactly how to correlate the "means for advancing said pause location" as set out in lines 6-8 thereof with the changing of such location as such appears in supra lines 4-5 thereof, or (4) exactly how to construe "new source code" appearing in lines 6-7 thereof with what has been previously claimed (see e.g. lines 7-8 of great grandparent Claim 14).

k) In Claim 18, lines 1-7, and 12-13 thereof are considered on the same basis as set out supra for lines 1-6 and 9-10 of Claim 14. Also in Claim 18, it is uncertain, (1) how to correlate the entrance of "source code" as per line 7 with the entrance of source code according to supra lines 5-6 and 2 thereof, (2) exactly what "source code" is modified according to lines 1-8

(see e.g. the question raised in item "1", above), (3) exactly how to correlate the "an individual editing operation" as set out in lines 9-11 thereof with the "modifying" as set out in supra line 8 or what is encompassed by "an individual editing operation" as is set out in such lines 9-11, or (4) exactly how to construe the recitations of "passing control of the processing unit" as is set out in lines 14-19 thereof for the reasons set out, supra, for Claim 14. Claims 19-21 are initially rejected as being dependent upon a rejected parent or base claim without curing the deficiencies noted for such parent or base claim. Also in Claim 19, it is uncertain how the editor means as set out in lines 8-11 of parent claim 18 (e.g. "modifying" and "editing") has the capacity to control "the extent of the source code to be compiled by the compiler means" as is set out in Claim 19. In Claim 20, it is uncertain where the antecedent basis for recompiling the "at least a portion of the source" as is set out therein for no "compiling" of such source code appears to have been previously claimed. In re Claim 21, such claim is considered on the same basis set out supra in this Office Action re Claim 17 and, in addition, it is uncertain whether such claim is supposed to be dependent upon claim 20 rather than on Claim 19 as is presently indicated.

1) In Claim 22, it is uncertain, (1) exactly what difference there is supposed to be between the "compiler system" as set out in previous claims and the "computer system" as set out in this claim (see also Claims 23-25), or (2) exactly where the antecedent basis is for "each pair of successive keystrokes" appearing in lines 8-9 thereof for supra lines 5-7 do not include any limitation to an even sequence of keystrokes. Claims 23-25 initially are rejected for being dependent upon a rejected claim. Also in Claim 23, the recitations of "having control" and "passing control" as set out therein are considered as set out supra in this Office Action re Claim 14. Also in Claim 24, it is uncertain, (1) exactly how the "source code entering means" as set out in lines 5-7 of Claim 22 has the capability of including the source code modifying editor means as set out in lines 2-3 thereof, or (2) exactly where the basis is for the "recompiling means" as set out in lines 4-6 thereof (see e.g. the comments set out, supra in this Office Action, re Claim 20). Also in Claim 25, it is uncertain, (1) what relationship (if any) there is between "character codes" appearing in line 3 thereof and the "character codes" as set out in lines 6-7 or base Claim 22, (2) exactly how the "source entering means" as set out in lines 4-7 (e.g. to enter "character codes") has the capability to include the interrupting

means as set out in lines 4-7 of this claim or the "control" return means as set out in lines 8-10 of this claim.

m) From all of the above comments, it should be obvious to the applicant that his claims are in need of correction and are considered not in condition for allowance even should no further issues exist in this application.

n) Because the courts have held that the second paragraph of 35 USC 112 considerations are primary in an application and have a profound effect on all other issues, this second paragraph rejection has been set out foremost in this Office Action (see e.g. In re Moore, 169 USPQ 236; In re Steele, 134 USPQ 292; and Ex parte Head, 214 USPQ 551).

17) The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The specification is objected to under 35 U.S.C. 112, first paragraph, as failing to provide an adequate written description of the invention and failing to adequately teach how to make and/or use the

invention, i.e. failing to provide an enabling disclosure.

a) Applicant's statement re the "appendix containing the Pascal source code implementing the invention for Pascal-S and the IBM Personal Computer" appearing in the reference to the "PRIOR APPLICATION" on page 1 has created an apparent contradiction in the specification as to exactly how applicant achieves his invention. Applicant's specification on pages, e.g. 6, 7, 14 and 17 still contain references to the use of Pascal to modify the compiler PL/O for an 8080/Z80 microprocessor as applicant's "best mode" for carrying out his invention, and yet in the above referred to insert to page 1 and the added appendix, applicant sets forth another "best mode" for carrying out his invention. The structures of the Z80 and the IBM Personal Computer are not the same. The PL/O, Pascal and Pascal-S languages are not the same. Thus the modifying languages for the two "best modes" cannot be the same. For the original "best mode", it appears that only a dozen pages are needed to set out the desired program whereas for the newer "best mode" at least 74 pages are needed to set out the desired program. Applicant is respectfully requested to explain the above recited contradictions.

b) Applicant is respectfully requested to



incorporate into the specification reference material showing the details of the IBM Personal Computer and the N. Wirth article that was modified (see page 1 of the Appendix) and also showing the date of general availability of such IBM Personal Computer.

c) Spelling, language and punctuation errors abound throughout the specification creating many problems in interpreting exact<sup>ly</sup>/what applicant is attempting to describe (e.g. in lines 18-21 on page 2, a "comma" is needed after "translation") and exactly what is meant by "other object code modules" (emphasis added thereto) is subject to speculation; a "comma" is needed after "years" in line 23 on page 2; no antecedent basis has been set for "the editor" appearing in lines 4-5 on page 3, thus creating speculation as to what is meant thereby; a "comma" appears necessary after "console" in line 13 on page 4; a "comma" appears necessary before "the" line 17 on page 4; the expression<sup>is</sup> ". Otherwise "appearing in line 18 on page 4 should be ", otherwise"; a "comma" appears necessary after "entered" in line 20, after "modern" in line 26 and after "Ada" in line 27 on page 4; a "comma" appears necessary after "approach" in line 3 on page 5; the term "The" (or "the") instead of "A" (or "a") appear in many instances in lines 4-29 on page 7 when making reference to an element for the first time; the misspelling of "or appearing in line 20 on

page 9; etc. etc.).

d) The objects of the invention as set out in lines 2-30 on page 6 are considered to be based on what <sup>desideratum</sup> "should" be done (e.g./ ) and not on what the claimed invention accomplishes.

e) In re the "SUMMARY OF THE INVENTION" as set out on pages 7-10, what is set out therein does not appear reflected by what has been claimed which in any application sets out the metes and bounds of "the invention" (e.g. no "file name", no "disk", no "memory region", no "infinite loop", no "blank" space, no "interrupt acknowledge signal", no "RST" instruction, no "low memory", no "jump instruction", no "stack pointer or other CPU registers", no "alphanumeric or other non-control character", no "second location of the source code buffer", no restoration of "CPU registers", no "first location in the source code buffer", no "carriage return" character, no "code for a blank space", no "the end of the first line of source code", no "display", no "error message", no "next line of source code", no "screen editor", no "cursor", no "Recompile Flag", no "source text insertions", no "line preceding the most recently edited line", no "syntax error", no "error message", no "disk accesses", no "code buffer" (getting filled) and no "bank-select memory schemes" appear in any of the claims presently under

consideration).

f) The reference to the "8080 or Z80 microprocessor" as set out in line 18 on page 7 is unacceptable in its present form. No manufacturer or document have been identified so as to ascertain the details thereof and the date of its general availability. Should applicant have a document showing the above it should be incorporated into the specification.

g) Fig. 1, as a "schematic" diagram showing "the relation of the major hardware components" of the present invention, and the description thereof appears to be contradictory to the "preferred embodiment" described in the aforementioned "SUMMARY" as set on page 7-10 presuming that the "arrowheads" indicate data flow. Fig. 1 shows no bi-directional flow between elements whereas the above "SUMMARY" describes such flow in many passages thereof as does the description of Fig. 1 (see e.g. lines 17-21 and 28-29 on page 11). What is set out in lines, e.g. 29-30 (e.g. the compiler being stored in "main memory") has absolutely no basis. As set out in the parent application prosecution re Fig. 1, no correlation can be found in applicant's description of Fig. 1 as it appears on specification pages 10-12 with the referenced "8080 or Z80 microprocessor (see e.g. line 18 on page 7). Passages, e.g. "any suitable

Serial Number: 719,507

20

Art Unit: 232

terminal" appearing on page 11, comprising a video display (page 11), forming a unitary console having a RS-232-C serial link (page 11), transmitting a byte to "the accumulator (for compiling?) of the CPU (page 11) and "a byte from such accumulator", not using "the usual operating mode of a conventional (not the 8080 or Z80?) system" but employing "an interrupt mode of ... CPU normally executes the compiler ... stored in an area of main memory designated ... as Compiler", activating "the INTERRUPT CONTROLLER" to cause execution of "the editor" (not capitalized?) "stored in an area of main memory", the entry of "the received character in the SOURCE BUFFER in main memory to cause resumption of the COMPILER by the CPU to analyze "the program (?) source code" stored in the SOURCE BUFFER for "the COMPILER" to emit "object code" for storage, and upon completion of the source code program, control of the CPU "may be passed to the INTERPRETER" of the object code is in the form of "intermediate code" (page 12) for execution, an option given to store "object code in secondary storage" (page 12) and the compiler may be of the type to emit executable machine code with the ability "to stop execution of the program at any time" to examine "the values of the variables" (what ever they are?) and then continue execution" (page 12) all show no correlation to the referenced microprocessor. As a result, the

description of Fig. 1 as it appears on such pages 10-12 must be considered to be based on desideratum because of having no figure details in support thereof.

h) Re Fig. 2, no basis is considered to appear for the conversion of the levels as set out in lines 3-8 on page 13 or for the PRIORITY ENCODER AND THE INTERRUPT VECTOR REGISTER as shown of Fig. 2 so as to be referenced as "this chip/this register chip" (see e.g. lines 14 and 25 on page 13). Suitable legends are required for Fig. 2 in order to provide support for what is written on pages 13-15 relative thereto see e.g. "interrupt signal" GS; INTA ("interrupt acknowledge"); "interrupt request"; jamming the RST call onto the DATA BUS; pushing the contents of the program onto the stack (?); etc.; etc. The list of integrated circuits appearing on page 15 purportedly making up Fig. 2 is considered unacceptable on its present form for no information is given as to manufacturer, manufacturer's catalog number from which the listed numbers have been taken or date of general availability of all of the listed numbers. Since the "interrupt operation" as represented by Fig. 2 appears to be a major feature of applicant's "invention", no question re such figure should be left unanswered.

i) Re Fig. 3, it is uncertain how to correlate "a control character" and the effect thereof as set out in

lines 19-22 on page 15 and the rest of the operations shown by Figs. 5-6 or where the figure support is for what is set out in lines 19-26 on page 15. What is set out in lines 27-28 on page 15 and continued through to line 2 on page 16 do not appear to be consistent with Fig. 3 for such figures shows the Interrupt and Editor routines as separate routines and the Editor routine (and not the Interrupt routine) serving the RESTORE REGISTERS block. Also re Fig. 3, no distinction is made between the INTERRUPT routine and the ENABLE INTERRUPT routines shown thereon. Since every block shown by Fig. 3 is based on programming, applicant is respectfully requested to identify where in the program submitted with this application each of the blocks appear.

j) Re Fig. 4, no figure support appears for any initialization of the compiler in support of lines 8-9 on page 16 and no indication appears on such figure as to the origin/name given to the top most vertical line on Fig. 4. It is uncertain exactly how to construe the determination of a symbol/nonsymbol (see e.g. lines 21-30 on page 16) with the determination of a control/valid characters as set out in lines 19-26 on preceding page 15. No figure support is considered to be shown for the alternative operations suggested by what "may" be done by the applicant (see e.g. lines 1-9 on page 17).

k) The copy of the widely published compiler PL/O of Prof. N. Wirth (Ref. 12) which is referenced in lines 9-11 on page 17 and which "may be modified for implementation in the present invention" (emphasis added thereto) as submitted in the parent application is considered unreadable in many places and many pages thereof are not numbered - see e.g. pages 339, 340 (?), 341 (?), 343 (?), 344 (?), 345 and 346. Also, re such modified compiler PL/O publication, it is not known what the difference would be between it and the newly cited and modified Prof. N. Wirth's "Pascal-S" implementation of the invention using the IBM PERSONAL COMPUTER as shown by the APPENDIX submitted with this application. As indicated earlier in this Office Action, the initial "preferred" embodiment appeared to be a dozen pages long (see the July 1983 Microcomputing article, *infra*) whereas the latter submitted "preferred" embodiment required at least 74 pages, approximately six times the number of pages.

1) The July 1983 microcomputing article submitted by the applicant on May 18, 1984, on page 52 thereof, indicates that applicant implemented his invention on yet a third system e.g. "two S-100 computers: A Godbout system and a CCS/Cromemco system, using the keyboard interrupt scheme". A vast majority of what was written in the above referred to article and applicant's

specification is the same with applicant's purported modification to Prof. Wirth's compiler being added to the end of such article. Applicant's purported modification to the Wirth compiler as set on pages 17-19 of the specification and page 65 of the Microcomputing article do not agree in all respects (e.g. the FETCH procedure is not shown in the article).

m) In response to this Office Action, applicant is respectfully requested to indicate (e.g. by page and line number) exactly where in the newly submitted 74 page appendix that the modifications to the Wirth compiler as set out on specification pages 17-19 appear. It is also respectfully requested that the programming covering the operations for Figs. 4, 5 and 6 and the alternative features (see e.g. pages 19-26) be specifically pointed out in such 74 page appendix. This request is being made because no copy of the unmodified program has been submitted so a determination can be made as to exactly what is in the prior art and what modification thereto that the applicant has made that is worthy of patent coverage.

18) Claims 1 through 25 rejected under 35 U.S.C. 112, first paragraph, for the reasons set forth in the above objection to the specification.

19) Applicant is reminded of the proper content of an Abstract of the Disclosure.



Art Unit: 232

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains.

If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure.

If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement.

In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof.

If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following: (1) if a machine or apparatus, its organization and operation; (2) if an article, its method of making; (3) if a chemical compound, its identity and use; (4) if a mixture, its ingredients; (5) if a process, the steps. Extensive mechanical and design details of apparatus should not be given.

a) It is not understood what code "the source code" appearing in line 4 that is purportedly "stored in a memory bufer" according to lines 4-5 is referring to or its relationship (if any) to "source program" "Entered or edited" as set out in lines 2-3. In lines 5-6, it is uncertain, (1) how to correlate the "video terminal" to what has been claimed for the claims set

out the extent of the invention, (2) how to correlate "entry and edited" appearing in supra line 3 and "entry or editing" appearing in infra line 9, or (3) how to construe "the source code" appearing in line 6 with "the source code" appearing in supra line 4. No antecedent use of "compiler", "source code", "terminal keyboard", "central processing unit", "struck key", "advance of the compiler" and "reinitialization of the compiler" appearing in lines 3, 4, 6-7, 7-8, 10, 11-12 and 13, respectively, appears for such recitations to be referred to by "the". The "," appearing in line 14 is considered to have created disjointed phrases and thus should be deleted. The correct title should be "Abstract of the Disclosure".

20) The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) and (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at

Serial Number: 719,507

27

Art Unit: 232

the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

21) Claims 8, 10-16, 18-20 and 22-25 are rejected under 35 U.S.C. 103 as being unpatentable over Benson et. al. when considered with Spangler et. al.

a) The Benson et. al. publication is used as the primary and/or base reference and is considered to show the general real-time compiling system being advanced by the applicant whereas the Spangler et. al. system is introduced to show that a console having a keyboard for key interruption of a compiler system for real-time entry of data/source code, even though not shown in Benson et. al., is considered to be inherent in such systems. No change in the use of such references in the parent application is being made in this Office Action.

b) In view of the Wadsworth affidavit filed by the applicant in the parent application, he is considered to be accepting the non-underlined portions of the claims as either being old in the art or that he understands where they are found in the cited references. All of the rejected claims in this Office Action are the same as those discussed in the Wadsworth affidavit excepting for numbering. As a consequence, only the underlined portions of the respective claims in the Wadsworth affidavit are considered to warrant a response thereto.

c) That Benson et. al. is a computer/compiler system embracing real-time operation is an established fact (see e.g. pages 202 and 21-212 thereof). Lines, e.g. 9-27 in the right hand column on page 211 and 45-50 in the left hand column on page 212 show that the Benson et. al. system contemplated the equivalent of applicant's claimed "contemporaneous real-time entry and compilation of source code" (see e.g. lines 1-2 of Claim 8) and the interruption of "on-line operation" wherein the control of the system is taken over for the entry of source or modification data and the control of the system is then returned to the compiler (see, e.g. lines 5-9 of such Claim 8). Lines, e.g. 7-41 of the left hand column of page 210 of Benson et. al., are considered to describe a "real-time supervisor" which is easily the equivalent of applicant's generally claimed "editor means" (see e.g. Claim 12). Lines, e.g. 47-57 in the right hand column on page 211 of Benson et. al. easily set out the equivalent of the claimed reinitialization of "the compiler means after modification" as is set out in lines, e.g. 5-7 of applicant's dependent Claim 10 and in applicant's dependent Claim 13.

d) Lines, e.g. 37-44 in the right hand column on page 204 and in lines 62-64 in the righthand column on page 211 of Benson et. al. indicate that the interruption so as to introduce the modification is in

response to "some external event" and such event would be "system-dependent as far as the method of calling the compiling and modification are concerned". All computing systems as shown by Benson et. al. inherently have consoles (e.g. terminals) with control keys/keyboard, and the easiest and/or most proficient way of creating "some external event" is to strike "at least one of said keys" (see, e.g. lines 4-5 of Claim 11) while the compiler is in control of the system.

e) In Spangler et. al., elements 12, 65 and 73 on Fig. 3B, addresses 3502-3574 on Fig. 4A, addresses 7506-7777 on Fig. 4B, addresses 12034-12534 on Fig. 4C, addresses 14,560-14,654 and 16,410-16,615 on Fig. 4D, lines 9-11 of Column 1, lines 62-64 of column 2, lines 59-65 of Column 3, lines 28-33 and 52-55 in column 5, lines 64-68 in column 9 and continues through to line 5 in column 10 and lines 23-62 in column 12 all show in combination a console with a keyboard for key interruption in a compiler system for real-time entry of data/source code. It would be well within the capability of one ordinarily skilled in the art to combine the key/keyboard facilities as shown by the compiler Spangler et. al. system so as to supply what is considered to be inherent in the Benson et. al. compiler system.

f) The underlined portions of Claims, e.g. 14-16,

18-20 and 22-25 (the counterparts to the rest of the claims as set out in the aforementioned Wadsworth affidavit) are considered to repeat and/or be the material equivalent of underlined portions of claims already discussed.

22) Claims 9, 17 and 21 are rejected under 35 U.S.C. 103 as being unpatentable over Benson et. al. when considered with Spangler et. al. as applied to claims 8, 10-16, 18-20 and 22-25 above, and further in view of Sippl et. al.

a) All of Claims 9, 17 and 21 are considered to add only the equivalent of a "loop" to the claims/series of claims from which they depend. As stated in the prosecution of the parent application, a "loop" is an old and well known programming tool to ones ordinarily skillled in the art.

b) Pages 294, 844 and 845 of the Sippl et. al. book, "Computer Dictionary and Handbook" illustrate but one example of such tool.

c) In Benson et. al. lines, e.g. 37-44 and 40-41 in the right hand columns on pages 204 and 205, respectively, are considered to constitute one basis for the temporary suspension of the compiler program (e.g. to perform a "loop") and to allow the system to respond to "some external event" in a appropriate way (e.g. to respond to some variable). Previously mentioned lines

Serial Number: 719,507

31

Art Unit: 232

47-57 in the right hand column on page 211 of Benson et. al. are considered to show the necessity to keep the supervisor (e.g. "editor") linkage (e.g. "pause location") current so that new calls to the modified procedure may be responded to.

23) King et. al., Cosserat, Deerfield, O'Meara and Pardo et. al. are cited as pertinent prior art.


24) AN SSP OF THREE MONTHS IS SET.

25) Any inquiry concerning this communication or earlier communications from the examiner should be directed to H. E. Springborn whose telephone number is (703) 557-2011.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 557-2878.

HES/pal/d

September 5, 1985

  
HARVEY E. SPRINGBORN  
PRIMARY EXAMINER  
ART UNIT 232